



THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學



DEPARTMENT OF  
CIVIL AND ENVIRONMENTAL ENGINEERING  
土木及環境工程學系

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## A Frequency Based Transit Assignment Model that Includes Online Information and Capacity Constraints

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### Abstract

Transit assignment plays a key role in the planning and management of transit networks. This paper proposes a frequency based transit assignment model that includes online information and accounts for strict capacity constraints. A heuristic is proposed to solve the problem, which first applies an unconstrained transit assignment procedure and then handles only the over-loaded transit links, re-assigning the surplus passengers. An efficient procedure is developed, which requires very short running times compared to existing transit assignment models. The model considers two cases of occupancy information: (1) passengers are informed of the vehicle occupancy, and may change their route selection accordingly, (2) passengers have no occupancy information and in cases their boarding is denied, they are enforced to choose later departing alternative. The inclusion of capacity constraints increases the total travel time compared to the unconstrained model. It was also found that prior knowledge of the occupancy condition substantially reduces the additional travel time. This result emphasizes the potential benefits of providing occupancy information to the passengers.

**Date:** 12 February 2019 (Tuesday)

**Time:** 17:00 – 18:00

**Venue:** Room Z414, 4/F, Block Z,  
The Hong Kong Polytechnic University,  
Hung Hom, Kowloon, Hong Kong

### Speaker's Biography

Prof. Shlomo Bekhor is Professor in the Faculty of Civil and Environmental Engineering at the Technion, and currently the Head of the Transportation and Geo-Information Division. He has a B.Sc. in Aeronautical Engineering from ITA – Aeronautical Institute of Technology, Sao Jose dos Campos, Brazil. His M.Sc. and Ph.D. degrees in Transportation Engineering were obtained at the Technion. He spent a two-year Post-Doc at the Massachusetts Institute of Technology. He teaches and conducts research in transportation planning and network equilibrium models, and has special interest in route choice modeling. He has also participated in several consulting projects related to transportation demand forecasting. He has published more than 80 papers in refereed journals and presented more than 100 papers in international conferences. He has participated in several projects funded by the European Commission: CyberCars, CyberMove, CityMobil, CATS, 2MOVE2, SOLUTIONS.

\*\*\* All Interested Are Welcome \*\*\*

For further information, please contact Prof. Anthony Chen at Tel. 3400-8327.

Free Admission. Please reserve your seat with Ms. Tiffany Szeto by email: [tiffany.szeto@polyu.edu.hk](mailto:tiffany.szeto@polyu.edu.hk).

Certificates of attendance will be provided to participants who attend the whole seminar.